

We Claim:

1. A network of switches comprising:

a first switch having a first memory interface and a first expansion port;

an expansion bus having a first expansion bus interface and a second expansion bus interface, said first expansion bus interface connected to said first expansion port; and

a second switch having a second memory interface and a second expansion port, said second expansion port connected to said second expansion bus interface, thereby connecting said first switch to said second switch, wherein said expansion bus allows said first switch to directly access said second memory interface through said second switch and said second switch to directly access said first memory interface through said first switch.

2. The network of switches as recited in claim 1, wherein said first expansion port further comprises a first proxy component that enables data packets to be read from said first memory and written to said first memory by said second switch through said expansion bus, and wherein said second expansion port further comprises a second proxy component that enables data packets to be read from said second memory and written to said second memory by said first switch through said expansion bus.

3. The network of switch as recited in claim 1 wherein said first memory interface is configured to be connected to a first external memory and said second memory interface is configured to be connected to a second external memory.

4. The network of switches as recited in claim 1 further comprising a command bus connected between said first switch and said second switch allowing commands to be communicated between said first switch and said second switch.

5. A switch for transmitting and receiving data packets comprising:
a memory interface that accesses memory; and
an expansion port connected to said memory interface, wherein said expansion port is configured to be connected to an expansion bus connected to another switch thereby connecting two switches together allowing for sharing of memory.

6. The switch as recited in claim 5 wherein said expansion port further comprises a proxy component that when activated allows data packets to be read from said memory and written to said memory from another switch through said expansion port.

7. The switch as recited in claim 5 wherein said memory interface is configured to access external memory.

8. The switch as recited in claim 5 further comprising a command bus interface configured to be connected to another switch allowing commands to be communicated between switches.

9. A system of network of switches, said system comprising:
a first switch having a first memory and a first expansion port;
an expansion bus having a first expansion bus end and a second expansion bus end, said first expansion bus end connected to said first expansion port; and
a second switch having a second memory and a second expansion port, said second expansion port connected to said second expansion bus end, thereby connecting said first switch to said second switch, wherein said expansion bus allows said first switch to directly access said second memory through said second switch and said second switch to directly access said first memory through said first switch.

10. The system of network switches as recited in claim 9, wherein said first expansion port further comprises a first proxy component that when activated allows data packets to be directly read from said first memory and directly written to said first memory by said second switch through said expansion bus, and wherein said second expansion port further comprises a second proxy component that when activated allows data packets to be directly read from said second memory and directly written to said second memory by said first switch through said expansion bus.

11. The system of network switches as recited in claim 9, wherein said first memory is external memory and said second memory is external memory.

12. The system of network switches as recited in claim 9 further comprising a command bus connected between said first switch and said second switch allowing commands to be communicated between said first switch and said second switch.

13. A method for sharing memory between a first switch and a second switch connected to each other by an expansion bus comprising the steps of:

sending a command from a first switch to a second switch that said first switch is about to perform a memory read or write;

reading or writing a portion of packet data to local memory of said first switch;

and

reading or writing another portion of packet data to alternate memory through said second switch using said expansion bus.

14. The method as recited in claim 13, wherein said step of sending a command further comprises configuring said second switch to be a proxy allowing said packet data to be read from said second memory or written to said second memory by said first switch through said expansion bus.

15. The method as recited in claim 13, wherein said step of sending a command comprises the step of sending said command across a command bus connected between said first switch and said second switch allowing commands to be communicated between said first switch and said second switch.